

## **REMARKS**

Claims 1-5, 7, 9-14 and 23-35 are now pending in the application. The Examiner has indicated that claims 24-35 are allowable. Claims 6, 8, 15-22, and 36-42 had been previously cancelled. Applicants gratefully acknowledge the Examiner's willingness to allow these claims. The Examiner is respectfully requested to reconsider and withdraw the remaining rejections in view of the amendments and remarks contained herein.

### **REJECTION UNDER 35 U.S.C. § 112**

Claims 2, 25 and 30 stand rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point and distinctly claim the subject matter which Applicant regards as the invention. This rejection is respectfully traversed.

The Examiner asserts that the specification fails to disclose "pre-cured carbon fiber" and how it is made. The specification discloses "the fibers 102, 104 are made of pre-cured carbon" at page 9, line 1. Applicants submit that pre-cured carbon and its method of manufacturing are known in the art. Accordingly, Applicants respectfully request reconsideration and withdrawal of this rejection.

### **REJECTION UNDER 35 U.S.C. § 103**

Claims 1-5, 7, 9-14 and 23 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Saito (U.S. Pat. No. 5,635,263) in view of Williams (U.S. Pat. No. 3,239,403). This rejection is respectfully traversed.

At the outset, Applicants note that claim 1 recites, in part, that the article includes "a sheet removably attached to at least one side of said mesh tape, wherein said sheet

when removed exposes a clean roughened surface of said mesh tape". Saito in view of Williams fails to disclose these features.

Saito discloses carbon fibers 4 adhered to a substrate sheet 2 by an adhesive 3 (col. 3, lines 1-4). The adhesive 3 holds the carbon fibers 4 in an arrangement on the substrate sheet 2 (col. 3, lines 1-4). A resin 5 applied to a concrete beam surface 10 is used to adhere the carbon fibers 4, the adhesive 3, and the substrate sheet 2 to the surface and is left there to cure (col. 4, lines 41-51).

Saito does not disclose that the substrate sheet 2 is removable prior to application of the resin 5. First, the use of "mold release paper" as the substrate sheet 2 as stated in column 3, lines 34-36 of Saito does not suggest that the substrate sheet 2 is designed to be removable from the carbon fibers 4. "Mold release paper" at most implies that the substrate sheet 2 can be used not only to hold the loose collection of carbon fibers 4, but may also allow the carbon fibers 4, the substrate sheet 2, and the adhesive 3 to be easily released from a mold. It does not suggest that the substrate sheet 2 is designed to be removed from the carbon fibers 4 before application of the resin 5.

At most, the use of "mold release paper" in Saito suggests that the substrate sheet 2 is smooth and therefore that the substrate sheet 2 would *not* expose "a clean and roughened surface" as recited in claim 1 if it were removed.

The Examiner cites column 3 line 44 for supporting the assertion that the substrate sheet is "temporarily" stuck to the carbon fibers. However, the cited text simply refers to the requirement that the adhesive 3 be able to at least temporarily stick the carbon fibers 4 onto the substrate sheet 2. In other words, in Saito the adhesive 3

need only hold the carbon fibers 4 until such time as the resin 5 is applied. Saito states, "Any adhesive which can at least temporarily stick the carbon fibers 4 onto the substrate sheet 2 may in principle be used for forming the adhesive layer 3. It is preferable to use a resin [for the adhesive 3] having a satisfactory affinity with a thermosetting resin [the resin 5]" (col. 3, lines 44-48, *comments in brackets added*). Saito contemplates that the resin 5 will impregnate the substrate sheet 2 and take up the support of the carbon fibers 4 directly from the adhesive 3. In this regard, Saito teaches away from first removing the substrate sheet 2 to expose the adhesive 3.

In addition, the embodiment of Figure 2 clearly teaches away from first removing the substrate sheet 2. Saito states, "[w]hen sticking the second sheet 1 onto the already stuck sheet 1, the thermosetting resin may be applied again onto the substrate sheet 2 of the first sheet 1" (col. 4, lines 41-43). The substrate sheet 2 is clearly not removed in this embodiment. This is further supported in Figure 4, wherein it is clearly shown that the substrate sheets 2 are not removed prior to application of the resin 5.

Claim 1 further recites, in part, that the article includes "a rigidified mesh tape having a plurality of longitudinal fibers and a plurality of lateral fibers, wherein said fibers are coated in a resin". As the Examiner has stated, Saito fails to disclose these features. However, it is improper to combine Williams with Saito without the use of hindsight.

First, "there must be some suggestion or motivation... to combine reference teachings". MPEP § 706.02(j). There is no motivation to combine Williams with Saito. Saito discloses longitudinal fibers 4 supported on a substrate sheet 2 by an adhesive 3, but discloses no transverse fibers (col. 3, lines 54-59). Williams discloses a graphite

fiber cloth 2 having transverse fibers illustrated in Figure 5. However, the fibers 4 of Saito are completely supported by the substrate sheet 2 and do not require any lateral support in the form of transverse fibers. Accordingly, there is no motivation to combine the teachings of Williams with that of Saito.

Second, “[i]n order to rely on a reference as a basis for rejection of an applicant’s invention, the reference must either be in the field of applicant’s endeavor or, if not, then be reasonably pertinent to the particular problem with which the inventor was concerned”. *In re Oetiker*, 977 F.2d 1443, 24 USPQ2d 1443, 1445 (Fed. Cir. 1992). *See also* MPEP § 2141.01(a). Williams and Saito are not analogous art. Saito is directed to a reinforcing fiber sheet used for reinforcing a concrete structure (col. 1, lines 6-9). Conversely, Williams is directed towards the joining of two members using a resinous adhesive and a carbon cloth (col. 1, lines 14-16, 23-25). The uses contemplated for the carbon cloth include “lap joints, continuous joints, intermittent joints similar to spot welds, as well as laminates of two or more members” (col. 1, lines 19-22). This is further supported in Figure 1, wherein the graphite cloth 2 is sandwiched between two layers of metal 1, 1a. Accordingly, there is no reason that one skilled in the art of reinforcing concrete structures would look to methods of joining metal components as in Williams.

Finally, even assuming, *arguendo*, that it is proper to combine the teachings of Saito with Williams, neither reference, alone or combined, discloses “a rigidified mesh tape” as recited in claim 1. Saito discloses using “scrim cloth, glass cloth, mold release paper, nylon film” for the substrate sheet 2, none of which are rigid (col. 3, lines 34-36). Nowhere else in Sato are the carbon fibers 4 indicated to be “rigidified” or “mesh”.

Moreover, Williams clearly discloses using a "cloth", which is inherently not "rigidified". Accordingly, Saito and Williams fail to disclose this feature.

As noted above, claim 1 recites that removal of the sheet exposes a "clean and roughed surface." This feature is not disclosed by Saito or Williams, and Applicants respectfully disagree with the Examiner's assertion that "[t]he roughened surface of the tape for promoting attachment would have been obvious based on optimization through routine experimentation." In that "providing a roughened surface of the tape for promoting attachment" would have been obvious, it is not obvious to provide a removable sheet that inherently exposes a "clean and roughened surface" simply from its removal as indicated in claim 1. In fact, removal of a sheet would typically provide a smooth surface, not a roughened one. Accordingly, Applicants submit that the removal of the sheet to provide a clean and roughened surface is not obvious.

For the reasons stated above, Applicants respectfully submit that Saito in view of Williams does not render obvious the present invention. Accordingly, Applicants respectfully request reconsideration and withdrawal of the rejection of claim 1. Moreover, claims 2-5, 7, 9-14, and 23 all depend from independent claim 1 and are likewise in condition for allowance.

## **CONCLUSION**

It is believed that all of the stated grounds of rejection have been properly traversed, accommodated, or rendered moot. Applicant therefore respectfully requests that the Examiner reconsider and withdraw all presently outstanding rejections. It is believed that a full and complete response has been made to the outstanding Office

Action, and as such, the present application is in condition for allowance. Thus, prompt and favorable consideration of this amendment is respectfully requested. If the Examiner believes that personal communication will expedite prosecution of this application, the Examiner is invited to telephone the undersigned at (248) 641-1600.

Respectfully submitted,

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